

What is Claimed is:

1. A flame retardant polymeric electrical part composition which comprises

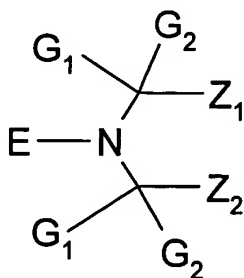
(a) a thermoplastic resin and

(b) an effective flame retarding amount of a synergistic mixture of

(i) at least one sterically hindered alkoxyamine stabilizer and

(ii) at least one conventional organohalogen flame retardant.

2. A composition according to claim 1 where the alkoxyamines of component (i) are of the formula



where

G₁ and G₂ are independently alkyl of 1 to 8 carbon atoms or are together pentamethylene,

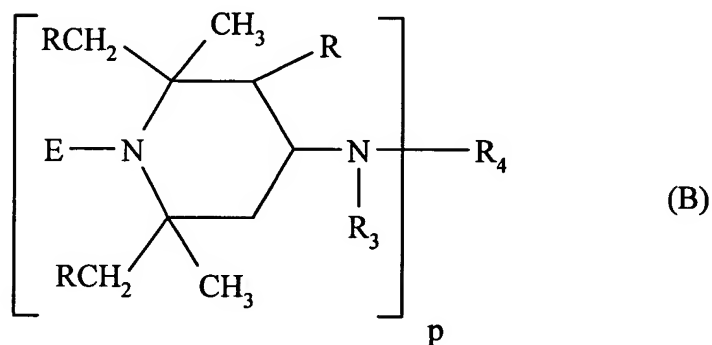
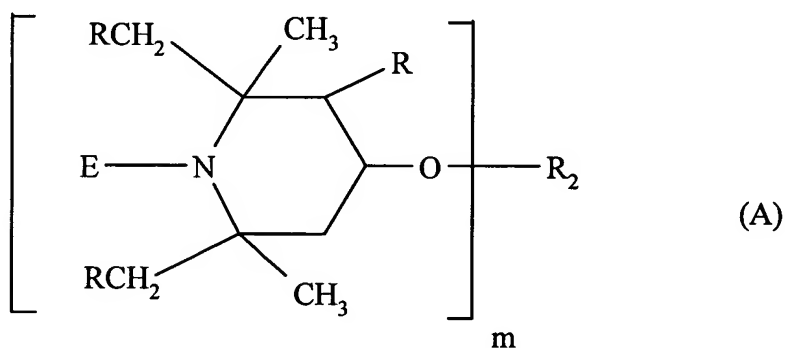
Z₁ and Z₂ are each methyl, or Z₁ and Z₂ together form a linking moiety which may additionally be substituted by an ester, ether, amide, amino, carboxy or urethane group, and

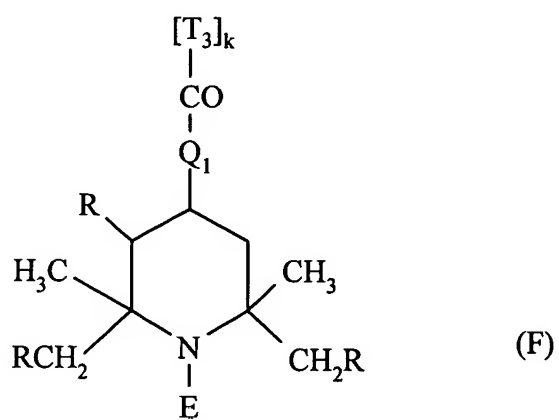
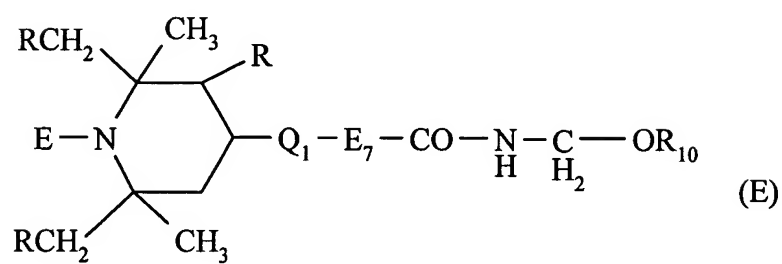
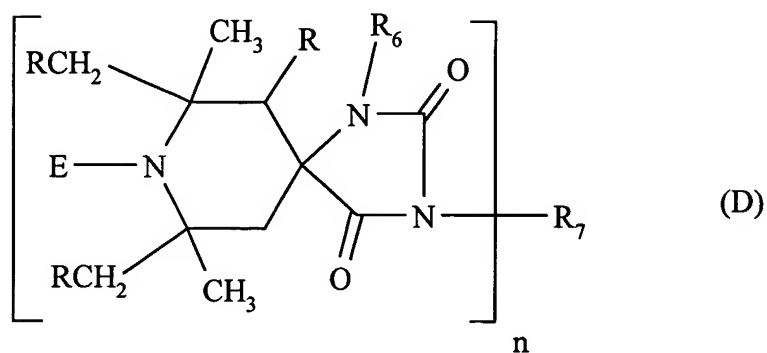
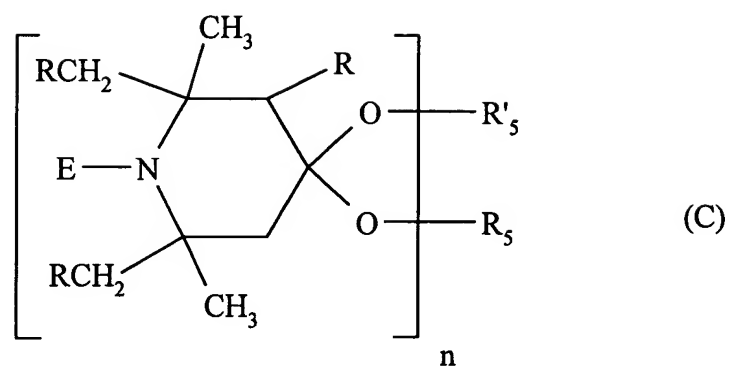
E is alkoxy, cycloalkoxy, aralkoxy, aryloxy or -O-T-(OH)_b,

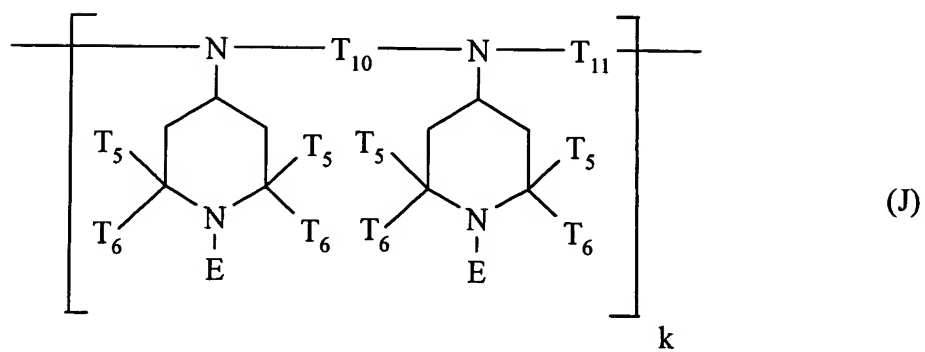
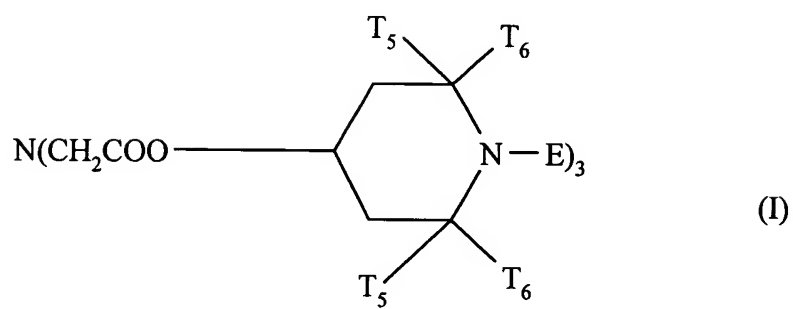
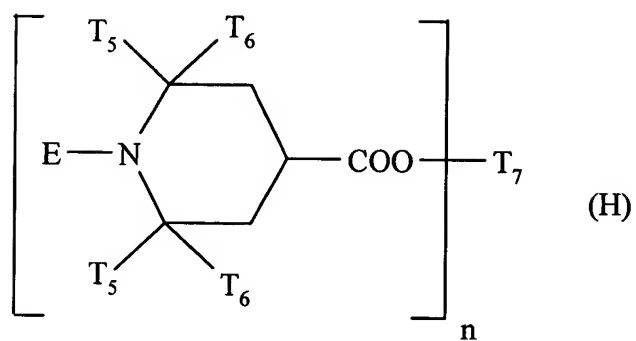
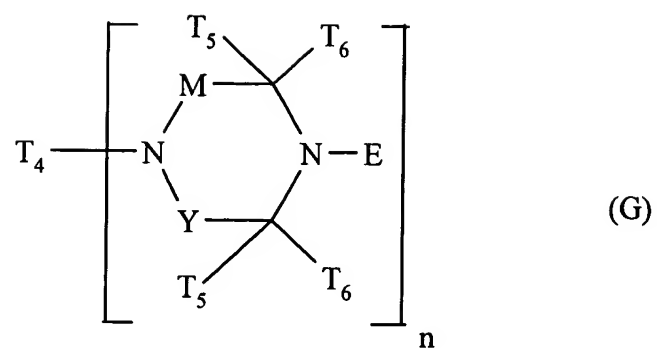
T is a straight or branched chain alkylene of 1 to 18 carbon atoms, cycloalkylene of 5 to 18 carbon atoms, cycloalkenylene of 5 to 18 carbon atoms, a straight or branched chain alkylene of 1 to 4 carbon atoms substituted by phenyl or by phenyl substituted by one or two alkyl groups of 1 to 4 carbon atoms;

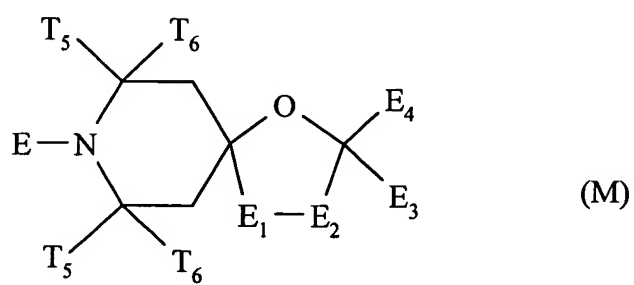
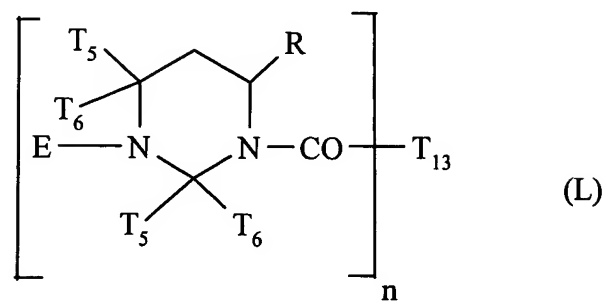
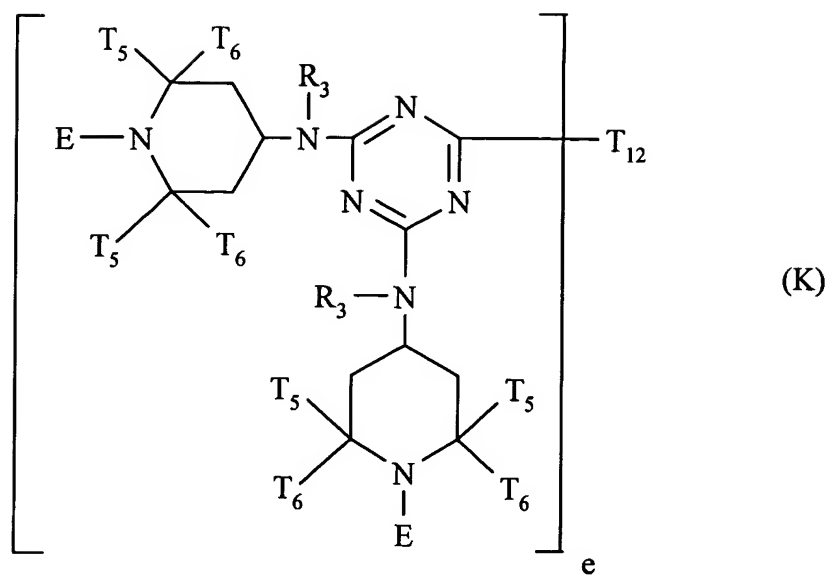
b is 1, 2 or 3 with the proviso that b cannot exceed the number of carbon atoms in T, and when b is 2 or 3, each hydroxyl group is attached to a different carbon atoms of T.

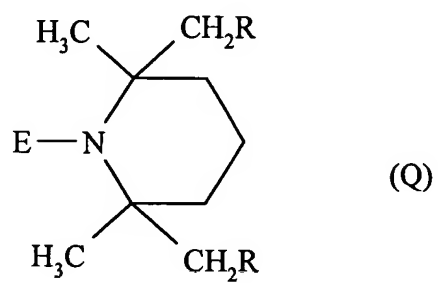
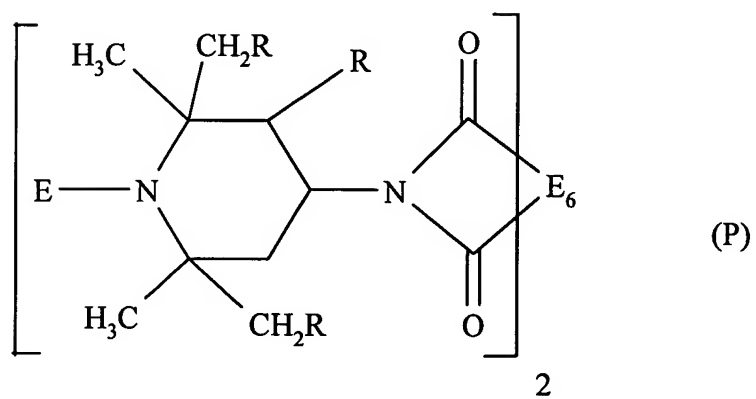
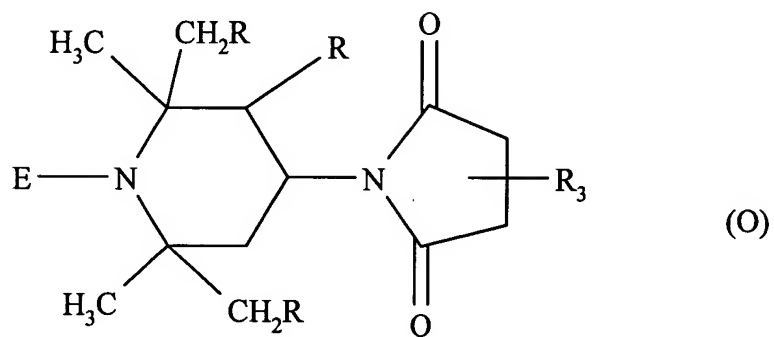
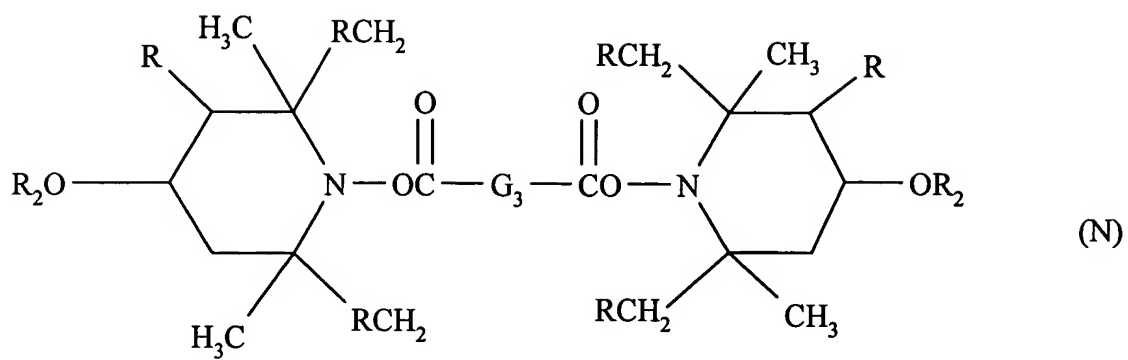
3. A composition according to claim 2 where the alkoxyamines of component (i) are of the formula A-R

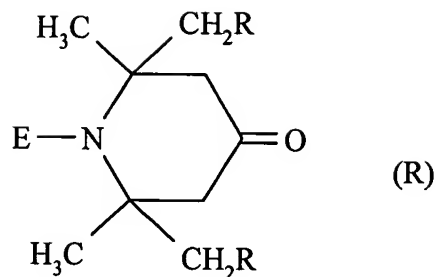












wherein

E is alkoxy of 1 to 18 carbon atoms, cycloalkoxy of 5 to 12 carbon atoms or aralkoxy of 7 to 15 carbon atoms, or E is -O-T-(OH)_b,

T is a straight or branched chain alkylene of 1 to 18 carbon atoms, cycloalkylene of 5 to 18 carbon atoms, cycloalkenylene of 5 to 18 carbon atoms, a straight or branched chain alkylene of 1 to 4 carbon atoms substituted by phenyl or by phenyl substituted by one or two alkyl groups of 1 to 4 carbon atoms;

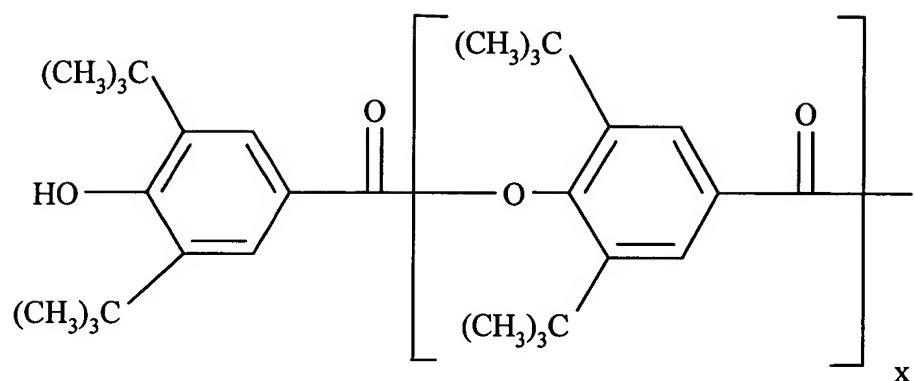
b is 1, 2 or 3 with the proviso that b cannot exceed the number of carbon atoms in T, and when b is 2 or 3, each hydroxyl group is attached to a different carbon atoms of T;

R is hydrogen or methyl,

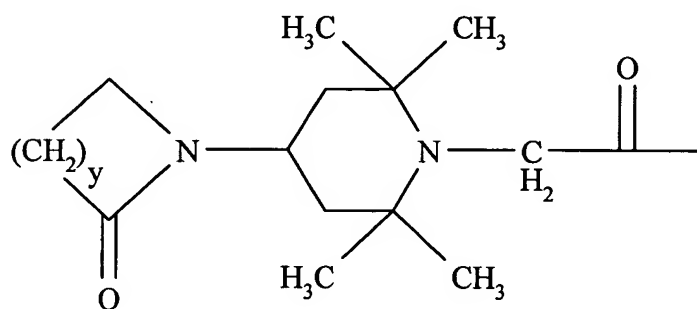
m is 1 to 4,

when m is 1,

R₂ is hydrogen, C₁-C₁₈alkyl or said alkyl optionally interrupted by one or more oxygen atoms, C₂-C₁₂alkenyl, C₆-C₁₀aryl, C₇-C₁₈aralkyl, glycidyl, a monovalent acyl radical of an aliphatic, cycloaliphatic or aromatic carboxylic acid, or a carbamic acid, of a cycloaliphatic carboxylic acid having 5-12 C atoms or of an aromatic carboxylic acid having 7-15 C atoms, or



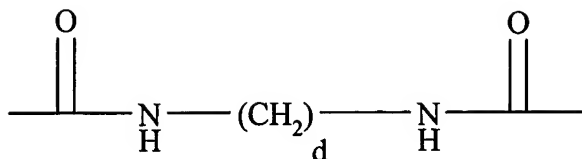
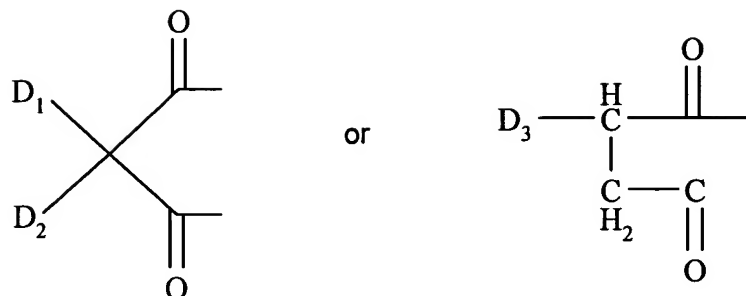
wherein x is 0 or 1,



wherein y is 2-4;

when m is 2,

R_2 is C_1 - C_{12} alkylene, C_4 - C_{12} alkenylene, xylylene, a divalent acyl radical of an aliphatic, cycloaliphatic, araliphatic or aromatic dicarboxylic acid or of a dicarbamic acid, of a cycloaliphatic or aromatic dicarboxylic acid having 8-14 C atoms, or of an aliphatic, cycloaliphatic or aromatic dicarbamic acid having 8-14 C atoms;



wherein D_1 and D_2 are independently hydrogen, an alkyl radical containing up to 8 carbon atoms, an aryl or aralkyl radical including 3,5-di-*t*-butyl-4-hydroxybenzyl radical, D_3 is hydrogen, or an alkyl or alkenyl radical containing up to 18 carbon atoms, and d is 0-20;

when m is 3, R_2 is a trivalent acyl radical of an aliphatic, unsaturated aliphatic, cycloaliphatic, or aromatic tricarboxylic acid;

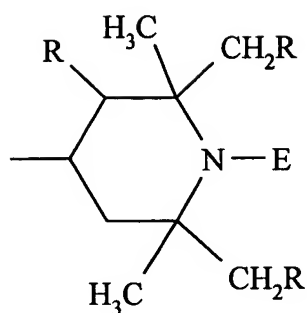
when m is 4, R_2 is a tetravalent acyl radical of a saturated or unsaturated aliphatic or aromatic tetracarboxylic acid including 1,2,3,4-butanetetracarboxylic acid, 1,2,3,4-but-2-ene-tetracarboxylic, and 1,2,3,5- and 1,2,4,5-pentanetetracarboxylic acid;

p is 1, 2 or 3,

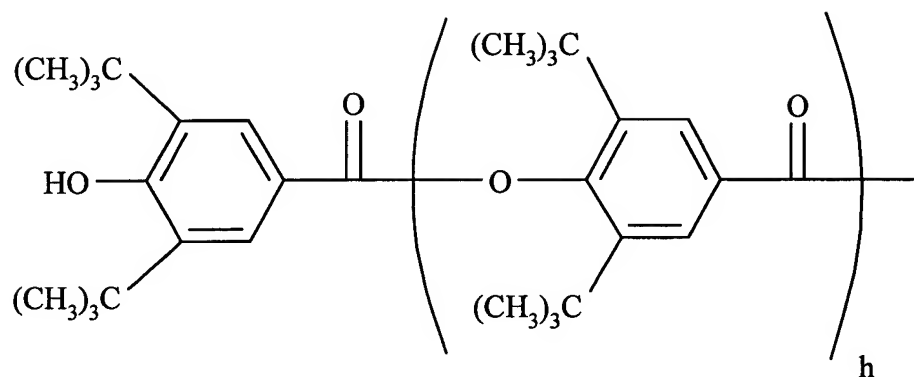
R_3 is hydrogen, C_1 - C_{12} alkyl, C_5 - C_7 cycloalkyl, C_7 - C_9 aralkyl, C_2 - C_{18} alkanoyl, C_3 - C_5 alkenoyl or benzoyl;

when p is 1,

R_4 is hydrogen, C_1 - C_{18} alkyl, C_5 - C_7 cycloalkyl, C_2 - C_8 alkenyl, unsubstituted or substituted by a cyano, carbonyl or carbamide group, aryl, aralkyl, or it is glycidyl, a group of the formula $-\text{CH}_2-\text{CH}(\text{OH})-\text{Z}$ or of the formula $-\text{CO}-\text{Z}$ or $-\text{CONH}-\text{Z}$ wherein Z is hydrogen, methyl or phenyl; or a group of the formulae



or



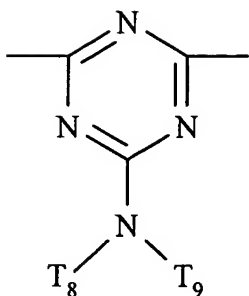
where h is 0 or 1,

R_3 and R_4 together, when p is 1, can be alkylene of 4 to 6 carbon atoms or 2-oxo-polyalkylene the cyclic acyl radical of an aliphatic or aromatic 1,2- or 1,3-dicarboxylic acid,

when p is 2,

R_4 is a direct bond or is C_1 - C_{12} alkylene, C_6 - C_{12} arylene, xylylene, a $-CH_2CH(OH)-CH_2$ group or a group $-CH_2-CH(OH)-CH_2-O-X-O-CH_2-CH(OH)-CH_2-$ wherein X is C_2 - C_{10} alkylene, C_6 - C_{15} arylene or C_6 - C_{12} cycloalkylene; or, provided that R_3 is not alkanoyl, alkenoyl or benzoyl, R_4 can also be a divalent acyl radical of an aliphatic, cycloaliphatic or aromatic dicarboxylic acid or dicarbamic acid, or can be the group $-CO-$; or

R_4 is



where T_8 and T_9 are independently hydrogen, alkyl of 1 to 18 carbon atoms, or T_8 and T_9 together are alkylene of 4 to 6 carbon atoms or 3-oxapentamethylene;

when p is 3,

R_4 is 2,4,6-triazinyl,

n is 1 or 2,

when n is 1,

R_5 and R'_5 are independently C_1 - C_{12} alkyl, C_2 - C_{12} alkenyl, C_7 - C_{12} aralkyl, or R_5 is also hydrogen, or R_5 and R'_5 together are C_2 - C_8 alkylene or hydroxyalkylene or C_4 - C_{22} acyloxyalkylene;

when n is 2,

R_5 and R'_5 together are $(-CH_2)_2C(CH_2-)_2$;

R_6 is hydrogen, C_1 - C_{12} alkyl, allyl, benzyl, glycidyl or C_2 - C_6 alkoxyalkyl;

when n is 1,

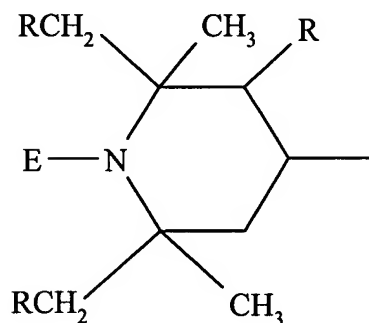
R_7 is hydrogen, C_1 - C_{12} alkyl, C_3 - C_5 alkenyl, C_7 - C_9 aralkyl, C_5 - C_7 cycloalkyl, C_2 - C_4 hydroxyalkyl, C_2 - C_6 alkoxyalkyl, C_6 - C_{10} aryl, glycidyl, a group of the formula $-(CH_2)_t-COO-Q$ or of the formula $-(CH_2)_t-O-CO-Q$ wherein t is 1 or 2, and Q is C_1 - C_4 alkyl or phenyl; or

when n is 2,

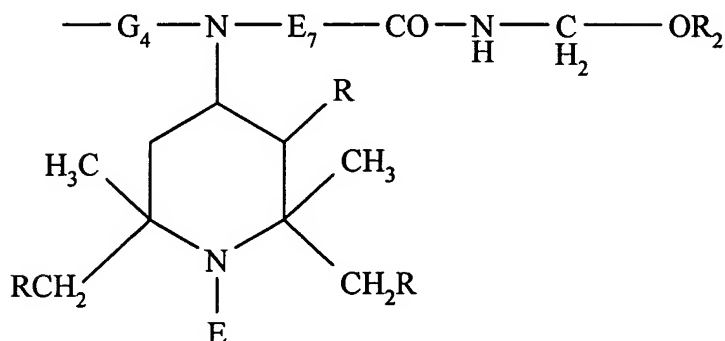
R_7 is C_2 - C_{12} alkylene, C_6 - C_{12} arylene, a group $-CH_2CH(OH)-CH_2-O-X-O-CH_2-CH(OH)-CH_2-$ wherein X is C_2 - C_{10} alkylene, C_6 - C_{15} arylene or C_6 - C_{12} cycloalkylene, or a group $-CH_2CH(OZ')CH_2-(OCH_2-CH(OZ')CH_2)_2-$ wherein Z' is hydrogen, C_1 - C_{18} alkyl, allyl, benzyl, C_2 - C_{12} alkanoyl or benzoyl;

Q_1 is $-N(R_8)-$ or $-O-$; E_7 is C_1 - C_3 alkylene, the group $-CH_2-CH(R_9)-O-$ wherein R_9 is hydrogen, methyl or phenyl, the group $-(CH_2)_3-NH-$ or a direct bond;

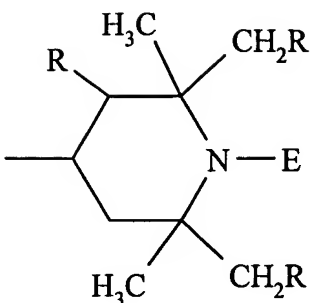
R_{10} is hydrogen or C_1 - C_{18} alkyl, R_8 is hydrogen, C_1 - C_{18} alkyl, C_5 - C_7 cycloalkyl, C_7 - C_{12} aralkyl, cyanoethyl, C_6 - C_{10} aryl, the group $-CH_2-CH(R_9)-OH$ wherein R_9 has the meaning defined above; a group of the formula



or a group of the formula



wherein G_4 is C_2 - C_6 alkylene or C_6 - C_{12} arylene; or R_8 is a group $-E_7-CO-NH-CH_2-OR_{10}$;



a, b and c are independently 2 or 3, and f is 0 or 1; and

e is 2, 3 or 4;

T_{13} is the same as R_2 with the proviso that T_{13} cannot be hydrogen when n is 1;

E_1 and E_2 , being different, each are $-CO-$ or $-N(E_5)-$ where E_5 is hydrogen, C_1-C_{12} alkyl or C_4-C_{22} alkoxy carbonylalkyl,

E_3 is hydrogen, alkyl of 1 to 30 carbon atoms, phenyl, naphthyl, said phenyl or said naphthyl substituted by chlorine or by alkyl of 1 to 4 carbon atoms, or phenylalkyl of 7 to 12 carbon atoms, or said phenylalkyl substituted by alkyl of 1 to 4 carbon atoms,

E_4 is hydrogen, alkyl of 1 to 30 carbon atoms, phenyl, naphthyl or phenylalkyl of 7 to 12 carbon atoms, or

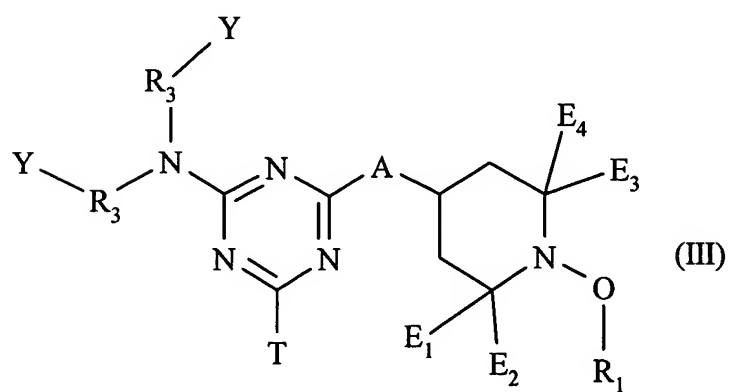
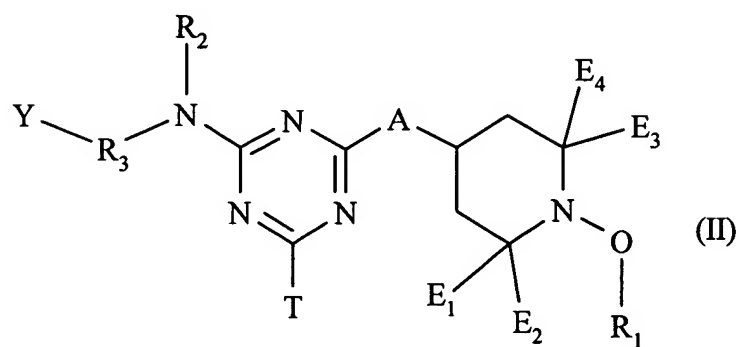
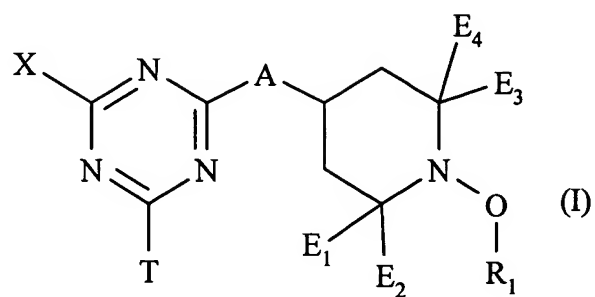
E_3 and E_4 together are polymethylene of 4 to 17 carbon atoms, or said polymethylene substituted by up to four alkyl groups of 1 to 4 carbon atoms,

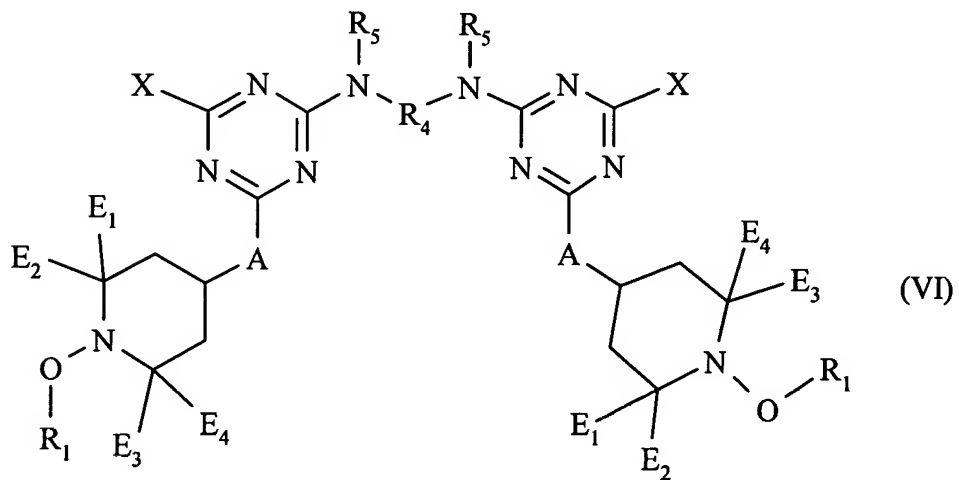
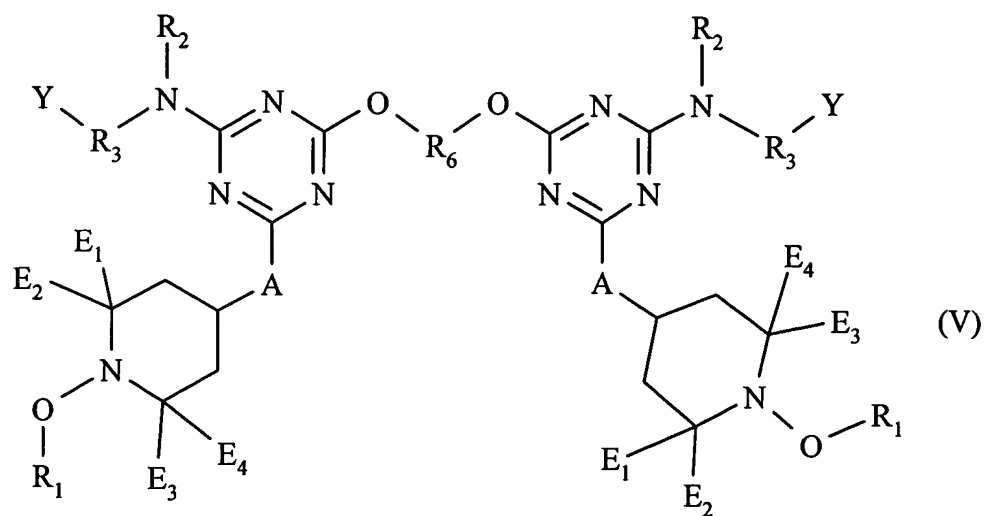
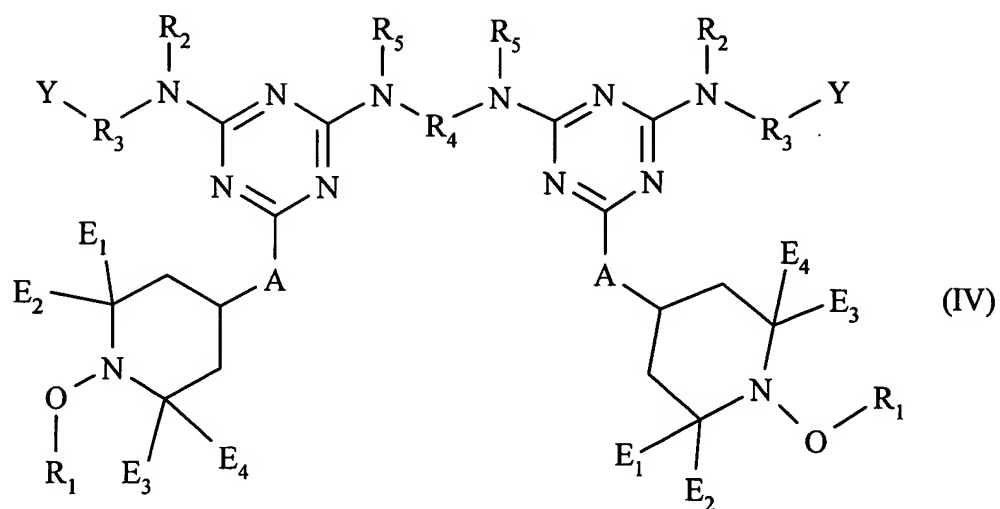
E_6 is an aliphatic or aromatic tetravalent radical,

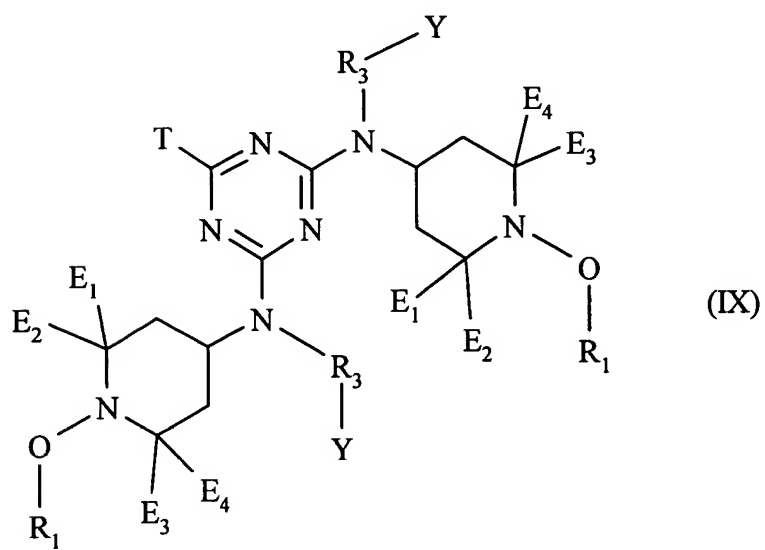
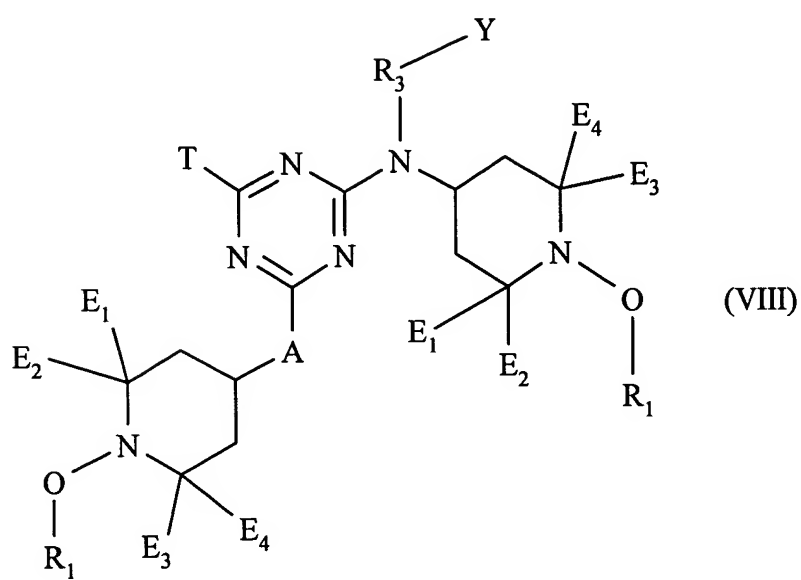
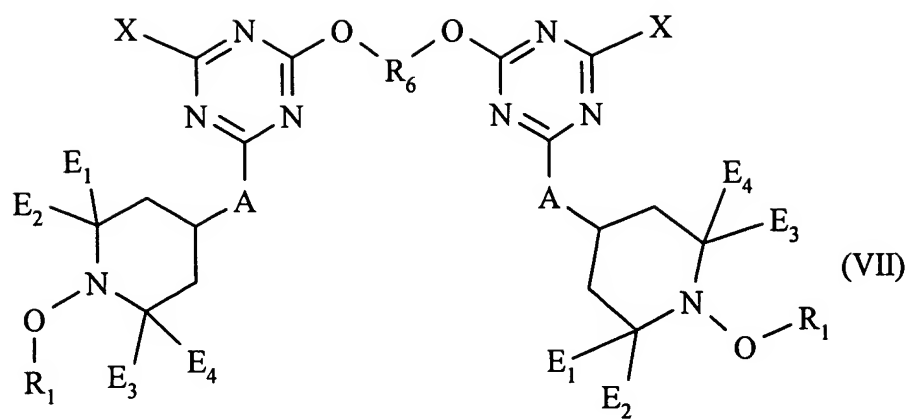
R_2 of formula (N) is a previously defined when m is 1;

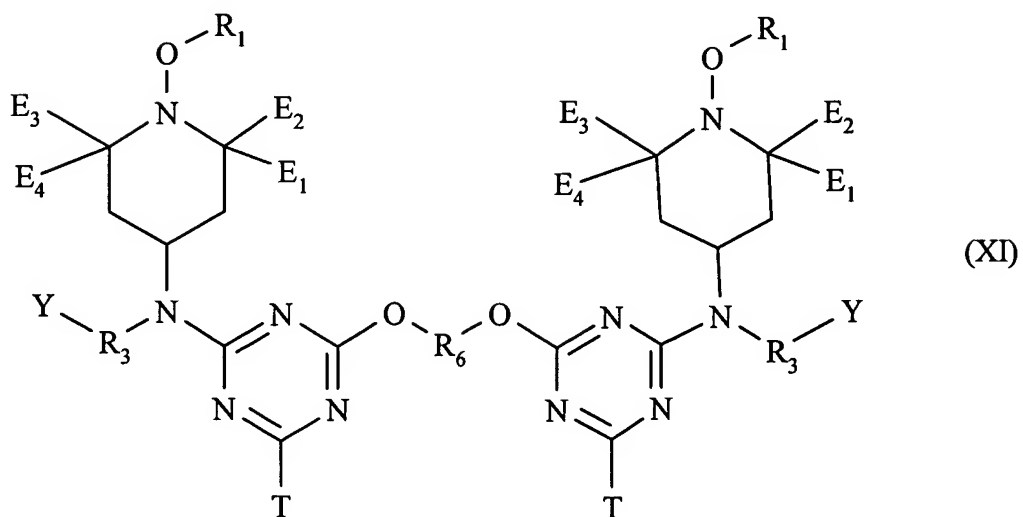
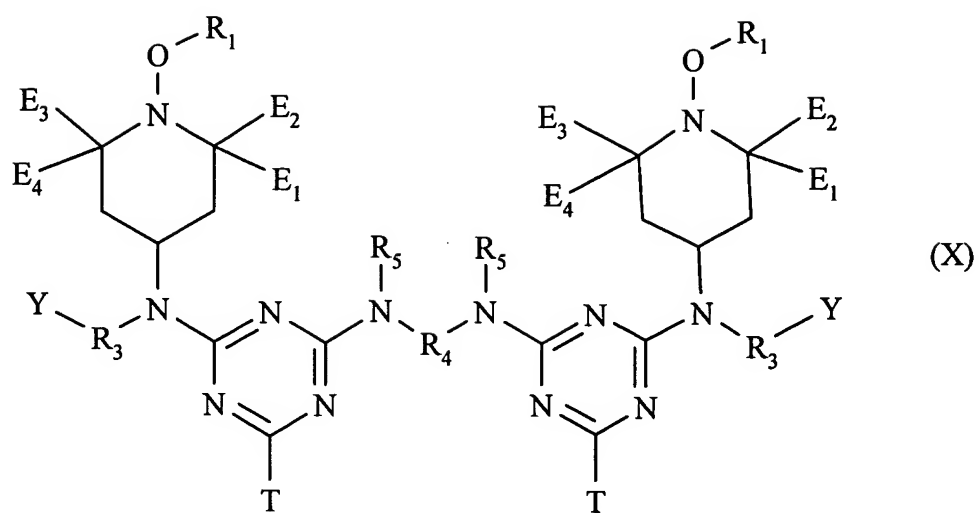
G_1 a direct bond, C_1-C_{12} alkylene, phenylene or $-NH-G'-NH$ wherein G' is C_1-C_{12} alkylene; or

wherein the hindered amine compound is a compound of the formula I, II, III, IV, V, VI, VII, VIII, IX, X or XI









wherein

E_1 , E_2 , E_3 and E_4 are independently alkyl of 1 to 4 carbon atoms, or E_1 and E_2 are independently alkyl of 1 to 4 carbon atoms and E_3 and E_4 taken together are pentamethylene, or E_1 and E_2 ; and E_3 and E_4 each taken together are pentamethylene,

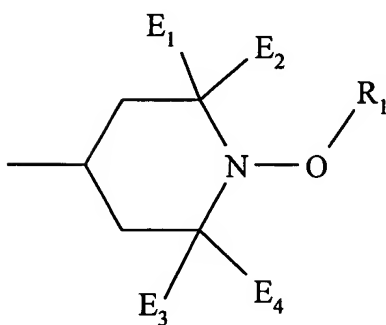
R_1 is alkyl of 1 to 18 carbon atoms, cycloalkyl of 5 to 12 carbon atoms, a bicyclic or tricyclic hydrocarbon radical of 7 to 12 carbon atoms, phenylalkyl of 7 to 15 carbon atoms, aryl of 6 to 10 carbon atoms or said aryl substituted by one to three alkyl of 1 to 8 carbon atoms,

R_2 is hydrogen or a linear or branched chain alkyl of 1 to 12 carbon atoms,

R_3 is alkylene of 1 to 8 carbon atoms, or R_3 is $-\text{CO}-$, $-\text{CO}-R_4-$, $-\text{CONR}_2-$, or $-\text{CO}-\text{NR}_2-R_4-$,

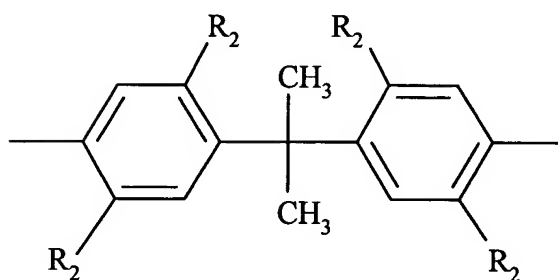
R_4 is alkylene of 1 to 8 carbon atoms,

R_5 is hydrogen, a linear or branched chain alkyl of 1 to 12 carbon atoms, or



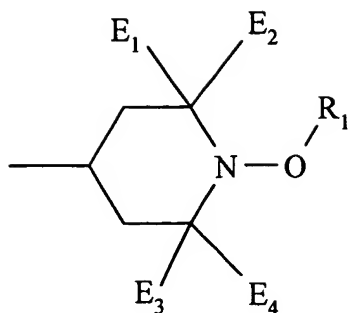
or when R_4 is ethylene, two R_5 methyl substituents can be linked by a direct bond so that the triazine bridging group $-\text{N}(R_5)-R_4-\text{N}(R_5)-$ is a piperazin-1,4-diyl moiety,

R_6 is alkylene of 2 to 8 carbon atoms or R_6 is

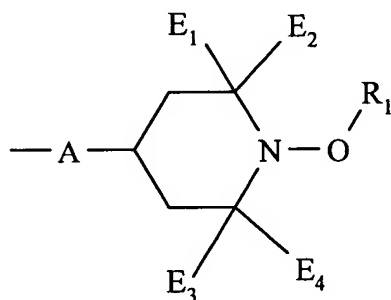


with the proviso that Y is not $-\text{OH}$ when R_6 is the structure depicted above,

A is $-\text{O}-$ or $-\text{NR}_7-$ where R_7 is hydrogen, a straight or branched chain alkyl of 1 to 12 carbon atoms, or R_7 is



T is phenoxy, phenoxy substituted by one or two alkyl groups of 1 to 4 carbon atoms, alkoxy of 1 to 8 carbon atoms or $-N(R_2)_2$ with the stipulation that R_2 is not hydrogen, or T is

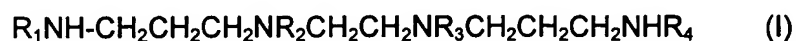


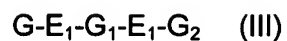
X is $-NH_2$, $-NCO$, $-OH$, $-O$ -glycidyl, or $-NHNH_2$, and

Y is $-OH$, $-NH_2$, $-NHR_2$ where R_2 is not hydrogen; or Y is $-NCO$, $-COOH$, oxiranyl, $-O$ -glycidyl, or $-Si(OR_2)_3$; or the combination R_3-Y- is $-CH_2CH(OH)R_2$ where R_2 is alkyl or said alkyl interrupted by one to four oxygen atoms, or R_3-Y- is $-CH_2OR_2$;

or

wherein the hindered amine compound is a mixture of N,N',N'' -tris{2,4-bis[(1-hydrocarbyloxy-2,2,6,6-tetramethylpiperidin-4-yl)alkylamino]-s-triazin-6-yl}-3,3'-ethylenediiminodipropylamine; N,N',N'' -tris{2,4-bis[(1-hydrocarbyloxy-2,2,6,6-tetramethylpiperidin-4-yl)alkylamino]-s-triazin-6-yl}-3,3'-ethylenediiminodipropylamine, and bridged derivatives as described by formulas I, II, IIA and III

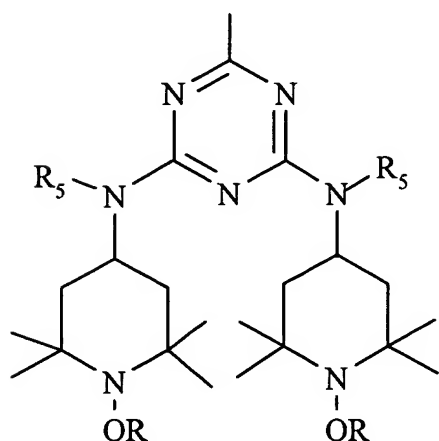




where in the tetraamine of formula I

R_1 and R_2 are the s-triazine moiety E; and one of R_3 and R_4 is the s-triazine moiety E with the other of R_3 or R_4 being hydrogen,

E is



R is methyl, propyl, cyclohexyl or octyl,

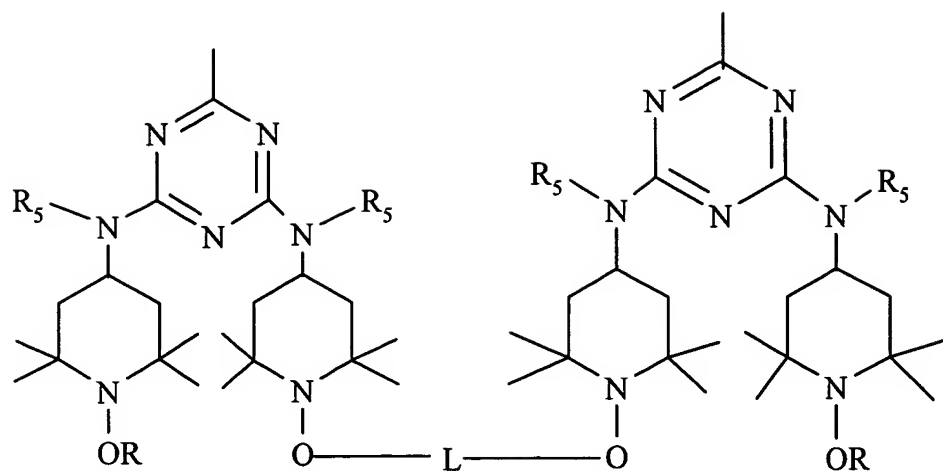
R_5 is alkyl of 1 to 12 carbon atoms,

where in the compound of formula II or IIA when R is propyl, cyclohexyl or octyl,

T and T_1 are each a tetraamine substituted by R_1 - R_4 as is defined for formula I, where

(1) one of the s-triazine moieties E in each tetraamine is replaced by the group E_1 which forms a bridge between two tetraamines T and T_1 ,

E₁ is



or

(2) the group E₁ can have both termini in the same tetraamine T as in formula IIA where two of the E moieties of the tetraamine are replaced by one E₁ group, or

(3) all three s-triazine substituents of tetraamine T can be E₁ such that one E₁ links T and T₁ and a second E₁ has both termini in tetraamine T,

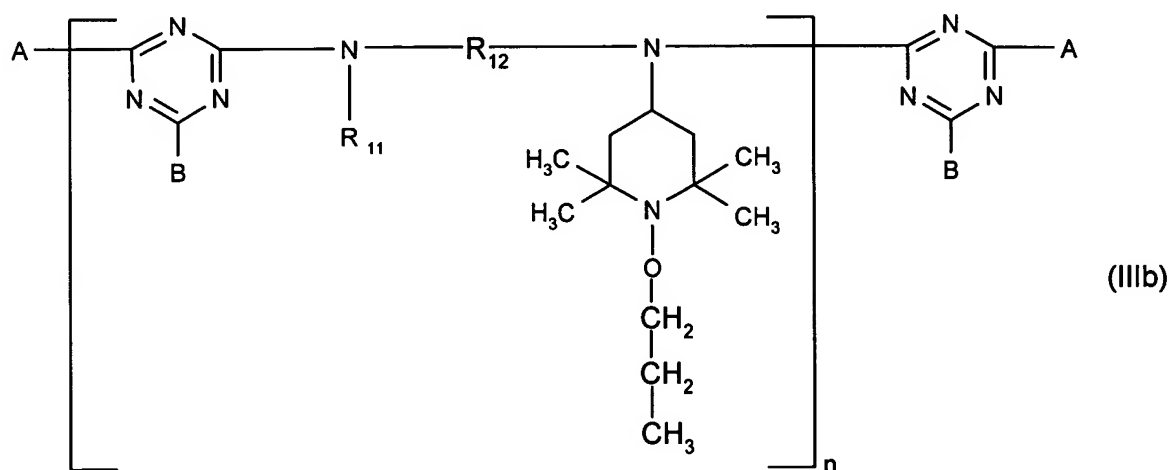
L is propanediyl, cyclohexanediyl or octanediyl;

where in the compound of formula III

G, G₁ and G₂ are each tetraamines substituted by R₁-R₄ as defined for formula I, except that G and G₂ each have one of the s-triazine moieties E replaced by E₁, and G₁ has two of the triazine moieties E replaced by E₁, so that there is a bridge between G and G₁ and a second bridge between G₁ and G₂;

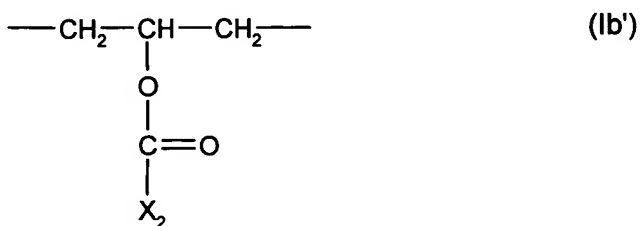
which mixture is prepared by reacting two to four equivalents of 2,4-bis[(1-hydrocarbyloxy-2,2,6,6-tetramethylpiperidin-4-yl)butylamino]-6-chloro-s-triazine with one equivalent of N,N'-bis(3-aminopropyl)ethylenediamine;

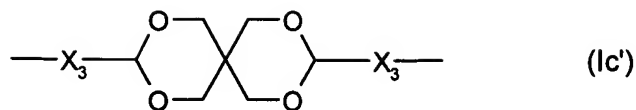
or the hindered amine is a compound of the formula IIIb



in which the index n ranges from 1 to 15;

R_{12} is C_2 - C_{12} alkylene, C_4 - C_{12} alkenylene, C_5 - C_7 cycloalkylene, C_5 - C_7 cycloalkylene-di(C_1 - C_4 alkylene), C_1 - C_4 alkylenedi(C_5 - C_7 cycloalkylene), phenylenedi(C_1 - C_4 alkylene) or C_4 - C_{12} alkylene interrupted by 1,4-piperazinediyl, -O- or $>N-X_1$ with X_1 being C_1 - C_{12} acyl or (C_1 - C_{12} alkoxy)carbonyl or having one of the definitions of R_{14} given below except hydrogen; or R_{12} is a group of the formula (Ib') or (Ic');





X_2 being C_1 - C_{18} alkyl, C_5 - C_{12} cycloalkyl which is unsubstituted or substituted by 1, 2 or 3 C_1 - C_4 alkyl; phenyl which is unsubstituted or substituted by 1, 2 or 3 C_1 - C_4 alkyl or C_1 - C_4 alkoxy; C_7 - C_9 phenylalkyl which is unsubstituted or substituted on the phenyl by 1, 2 or 3 C_1 - C_4 alkyl; and

the radicals X_3 being independently of one another C_2 - C_{12} alkylene;

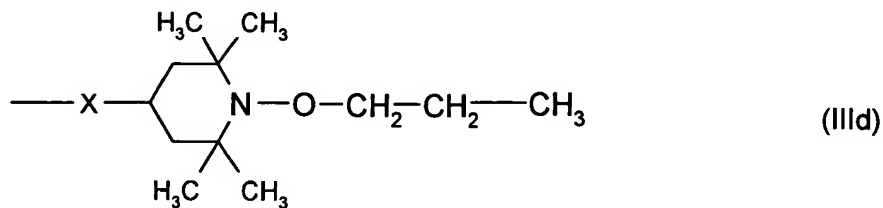
R_{13} , R_{14} and R_{15} , which are identical or different, are hydrogen, C_1 - C_{18} alkyl, C_5 - C_{12} cycloalkyl which is unsubstituted or substituted by 1, 2 or 3 C_1 - C_4 alkyl; C_3 - C_{18} alkenyl, phenyl which is unsubstituted or substituted by 1, 2 or 3 C_1 - C_4 alkyl or C_1 - C_4 alkoxy; C_7 - C_9 phenylalkyl which is unsubstituted or substituted on the phenyl by 1, 2 or 3 C_1 - C_4 alkyl; tetrahydrofurfuryl or C_2 - C_4 alkyl which is substituted in the 2, 3 or 4 position by -OH, C_1 - C_8 alkoxy, di(C_1 - C_4 alkyl)amino or a group of the formula (Ie');



with Y being -O-, -CH₂-, -CH₂CH₂- or >N-CH₃,

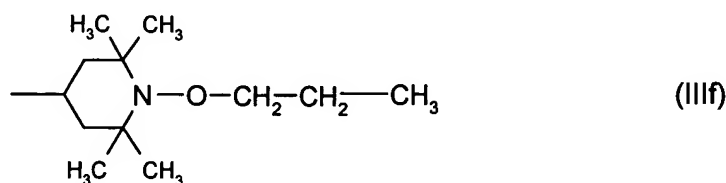
or -N(R_{14})(R_{15}) is additionally a group of the formula (Ie');

the radicals A are independently of one another -OR₁₃, -N(R_{14})(R_{15}) or a group of the formula (IIId);



X is -O- or >N- R_{16} ;

R₁₆ is hydrogen, C₁-C₁₈alkyl, C₃-C₁₈alkenyl, C₅-C₁₂cycloalkyl which is unsubstituted or substituted by 1, 2 or 3 C₁-C₄alkyl; C₇-C₉phenylalkyl which is unsubstituted or substituted on the phenyl by 1, 2 or 3 C₁-C₄alkyl; tetrahydrofurfuryl, a group of the formula (III f),



or C₂-C₄alkyl which is substituted in the 2, 3 or 4 position by -OH, C₁-C₈alkoxy, di(C₁-C₄alkyl)amino or a group of the formula (Ie');

R₁₁ has one of the definitions given for R₁₆; and

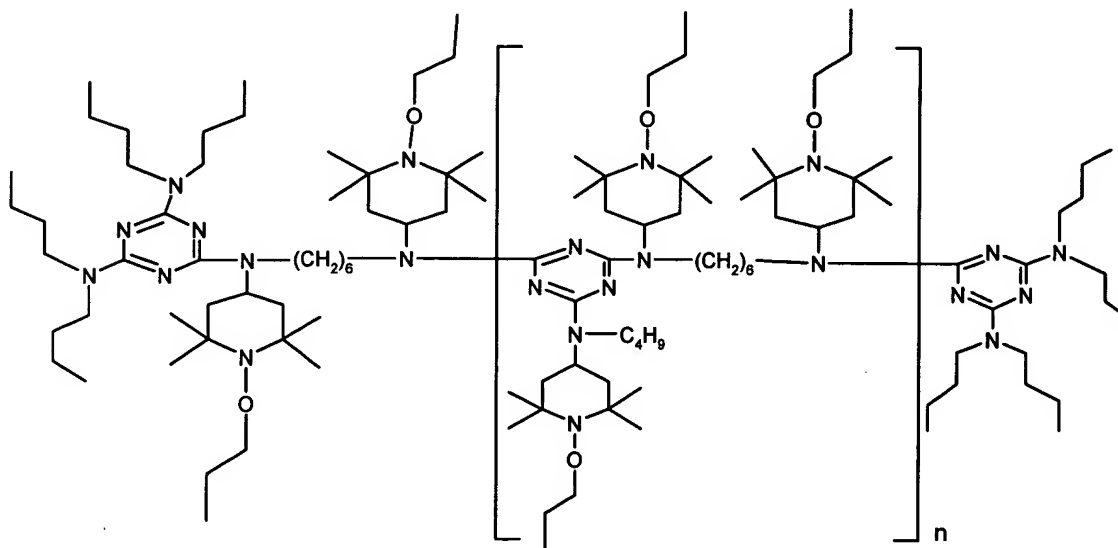
the radicals B have independently of one another one of the definitions given for A.

4. A composition according to claim 3 where the alkoxyamines are selected from the group consisting of

1-cyclohexyloxy-2,2,6,6-tetramethyl-4-octadecylaminopiperidine;
 bis(1-octyloxy-2,2,6,6-tetramethylpiperidin-4-yl) sebacate;
 2,4-bis[(1-cyclohexyloxy-2,2,6,6-tetramethylpiperidin-4-yl)butylamino]-6-(2-hydroxyethyl-amino-s-triazine);
 bis(1-cyclohexyloxy-2,2,6,6-tetramethylpiperidin-4-yl) adipate;
 2,4-bis[(1-cyclohexyloxy-2,2,6,6-tetramethylpiperidin-4-yl)butylamino]-6-chloro-s-triazine;
 1-(2-hydroxy-2-methylpropoxy)-4-hydroxy-2,2,6,6-tetramethylpiperidine;
 1-(2-hydroxy-2-methylpropoxy)-4-oxo-2,2,6,6-tetramethylpiperidine;
 1-(2-hydroxy-2-methylpropoxy)-4-octadecanoyloxy-2,2,6,6-tetramethylpiperidine;
 bis(1-(2-hydroxy-2-methylpropoxy)-2,2,6,6-tetramethylpiperidin-4-yl) sebacate;
 bis(1-(2-hydroxy-2-methylpropoxy)-2,2,6,6-tetramethylpiperidin-4-yl) adipate;
 2,4-bis{N-[1-(2-hydroxy-2-methylpropoxy)-2,2,6,6-tetramethylpiperidin-4-yl]-N-butyl-amino}-6-(2-hydroxyethylamino)-s-triazine;

the reaction product of 2,4-bis[(1-cyclohexyloxy-2,2,6,6-tetramethylpiperidin-4-yl)-butylamino]-6-chloro-s-triazine with N,N'-bis(3-aminopropyl)ethylenediamine) [CAS Reg. No. 191680-81-6]; and

the compound of formula



in which n is from 1 to 15.

5. A composition according to claim 3 where E is cyclohexyloxy.

6. A composition according to claim 3 where the alkoxyamines are selected from the group consisting of

the reaction product of 2,4-bis[(1-cyclohexyloxy-2,2,6,6-tetramethylpiperidin-4-yl)-butylamino]-6-chloro-s-triazine with N,N'-bis(3-aminopropyl)ethylenediamine) [CAS Reg. No. 191680-81-6];

1-cyclohexyloxy-2,2,6,6-tetramethyl-4-octadecylaminopiperidine;

2,4-bis[(1-cyclohexyloxy-2,2,6,6-tetramethylpiperidin-4-yl)butylamino]-6-(2-hydroxyethyl-amino-s-triazine;

bis(1-cyclohexyloxy-2,2,6,6-tetramethylpiperidin-4-yl) adipate;
 the oligomeric compound which is the condensation product of 4,4'-hexamethylene-
 bis(amino-2,2,6,6-tetramethylpiperidine) and 2,4-dichloro-6-[(1-cyclohexyloxy-2,2,6,6-tetra-
 methylpiperidin-4-yl)butylamino]-s-triazine end-capped with 2-chloro-4,6-bis(dibutylamino)-s-
 triazine; and
 2,4-bis[(1-cyclohexyloxy-2,2,6,6-tetramethylpiperidin-4-yl)butylamino]-6-chloro-s-triazine.

7. A composition according to claim 1 where the organohalogen flame retardants are
 selected from the group consisting of

chloroalkyl phosphate esters,
 tris(2-chloroethyl)phosphate,
 polybrominated diphenyl oxide,
 decabromodiphenyl oxide,
 tris[3-bromo-2,2-bis(bromomethyl)propyl] phosphate,
 tris(2,3-dibromopropyl)phosphate
 tris(2,3-dichloropropyl)phosphate,
 chlorendic acid,
 tetrachlorophthalic acid,
 tetrabromophthalic acid,
 bis-(N,N'-hydroxyethyl)tetrachlorophenylene diamine,
 poly-β-chloroethyl triphosponate mixture,
 bis(2,3-dibromopropyl ether) of tetrabromobisphenol A,
 brominated epoxy resin,
 ethylene-bis(tetrabromophthalimide),
 bis(hexachlorocyclopentadieno)cyclooctane,
 chlorinated paraffins,
 octabromodiphenyl ether,
 hexachlorocyclopentadiene derivatives,
 1,2-bis(tribromophenoxy)ethane,
 tetrabromo-bisphenol A,
 ethylene bis-(dibromo-norbornanedicarboximide),

bis-(hexachlorocyclopentadieno) cyclooctane,
PTFE,
tris-(2,3-dibromopropyl)-isocyanurate and
ethylene-bis-tetrabromophthalimide.

8. A composition according to claim 1 where the organohalogen flame retardants are organobromine flame retardants selected from the group consisting of

polybrominated diphenyl oxide,
decabromodiphenyl oxide,
tris[3-bromo-2,2-bis(bromomethyl)propyl] phosphate,
tris(2,3-dibromopropyl)phosphate
tetrabromophthalic acid,
bis(2,3-dibromopropyl ether) of tetrabromobisphenol A,
brominated epoxy resin,
ethylene-bis(tetrabromophthalimide),
octabromodiphenyl ether,
1,2-bis(tribromophenoxy)ethane,
tetrabromo-bisphenol A,
ethylene bis-(dibromo-norbornanedicarboximide),
tris-(2,3-dibromopropyl)-isocyanurate and
ethylene-bis-tetrabromophthalimide.

9. A composition according to claim 1 where the organohalogen flame retardants are brominated hydrocarbyl phosphates or phosphonates.

10. A composition according to claim 1 where the organohalogen flame retardant is tris[3-bromo-2,2-bis(bromomethyl)propyl] phosphate or bis(2,3-dibromopropyl ether) of tetrabromobisphenol A.

11. A composition according to claim 1 where the thermoplastic resin is polypropylene, polyethylene, propylene/ethylene copolymer or polystyrene.

12. A composition according to claim 1 where the weight ratio of component (i) to component (ii) is between about 1:5 to about 1:200.

13. A composition according to claim 1 where the weight ratio of component (i) to component (ii) is about 1:15 to about 1:100.

14. A composition according to claim 1 where the weight ratio of component (i) to component (ii) is about 1:25 to about 1:70.

15. A composition according to claim 1 where the weight ratio of component (i) to component (ii) is about 1:30 to about 1:50.

16. A composition according to claim 1 where the mixture of component (b) is present from about 5% to about 20% by weight based on the weight of component (a).

17. A composition according to claim 1 where the mixture of component (b) is present from about 8% to about 17% by weight based on the weight of component (a).

18. A composition according to claim 1 further comprising melamine based flame retardants.

19. A composition according to claim 1 containing no filler or a filler in an amount less than about 3% by weight based on the weight of component (a).

20. A composition according to claim 1 which further comprises

(c) an acid scavenger.

21. A composition according to claim 20 where the acid scavenger is selected from the group consisting of natural or synthetic hydrotalcites and amorphous basic aluminum magnesium carbonates.

22. A composition according to claim 20 where the acid scavenger is present from about 0.1% to about 1.0% by weight, based on the weight of component (a).

23. A composition according to claim 20 where the acid scavenger is present from about 0.2% to about 0.8% by weight, based on the weight of component (a).

24. An electrical part composition according to claim **1** which is a plug, socket or wire insulation.

25. An electrical part composition according to claim **20** which is a plug, socket or wire insulation.

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